

AMENDMENT TO THE CLAIMS

Claims 1-39 (canceled)

Claims 40-43 (withdrawn)

Claims 44-246 (canceled)

247. (new) A memory element, comprising:

a substrate;

a cup-shaped electrical contact electrically coupled to said substrate, said cup-shaped contact having an open end facing away from said substrate;

a dielectric material formed over the interior surface of said cup-shaped contact; and

a programmable resistance material electrically coupled to a top surface of said contact.

248. (new) The memory element of claim 247, wherein said electrical contact comprises at least one material selected from the group consisting of titanium nitride, titanium aluminum nitride, titanium carbonitride, titanium silicon nitride, carbon, N- doped polysilicon, titanium tungsten, tungsten silicide, tungsten, molybdenum, N+ doped polysilicon.

249. (new) The memory element of claim 247, wherein said programmable resistance material includes a phase change material.

250. (new) The memory element of claim 247, wherein said programmable resistance material includes a chalcogen element.

251. (new) A memory element, comprising:
a substrate;
a cup-shaped conductive layer electrically coupled to said substrate, said conductive layer having an open end facing away from said substrate;
a dielectric material formed over the interior surface of said cup-shaped conductive layer; and
a programmable resistance material electrically coupled to a top edge of said conductive layer.

252. (new) The memory element of claim 251, wherein substantially all electrical communication between said programmable resistance material and said electrical contact occurs through said top edge.

253. (new) The memory element of claim 251, wherein the area of contact between said programmable resistance material and said conductive layer is an annulus or portion thereof.

254. (new) The memory element of claim 251, wherein said conductive layer comprises at least one material selected from the group consisting of titanium nitride, titanium aluminum nitride, titanium carbonitride, titanium silicon nitride, carbon, N- doped polysilicon, titanium tungsten, tungsten silicide, tungsten, molybdenum, N+ doped polysilicon.

255. (new) The memory element of claim 251, wherein said programmable resistance material includes a phase change material.

256. (new) The memory element of claim 251, wherein said programmable resistance material includes a chalcogen element.

257. (new) The memory element of claim 251, wherein said top edge includes one or more raised portions.